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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/753,523	01/08/2004	Eric Lawrence Barsness	ROC920030328US1	9847
30206 7590 05/16/2007 IBM CORPORATION ROCHESTER IP LAW DEPT. 917 3605 HIGHWAY 52 NORTH ROCHESTER, MN 55901-7829			EXAMINER PYO, MONICA M	
			ART UNIT 2161	PAPER NUMBER
			MAIL DATE 05/16/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/753,523	Applicant(s) BARSNESS ET AL.	
	Examiner Monica M. Pyo	Art Unit 2161	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 and 17-19 is/are pending in the application.
- 4a) Of the above claim(s) 3-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-2 & 17-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This communication is responsive to Amendment filed 3/12/2007.
2. Claims 1-15 and 17-19 are currently pending in this application. Claims 1 and 17 are independent claims. In the Amendment filed 3/12/2007, claim 19 is amended and claims 3-6 and 8-15 are withdrawn. This action is made Final.

Claim Objections

3. Claim 7 is objected to because of the following informalities:

Regarding claim 7, no patentability based on art will be determined at this time since the claim 7 was a part of the invention II that has been restricted out. In view of MPEP 1.121(c), claim 7 does not disclose the correct status of the claim. In the claim listing, the status of every claim must be indicated after its claim number by using one of the following identifiers in a parenthetical expression: (Original), (Currently amended), (Canceled), (Withdrawn), (Previously presented), (New), and (Not entered). Thus, claim 7 should recite appropriate 'claim status' and needs to be corrected from "Previously Presented" to "Withdrawn."

Appropriate correction is required.

Claim Rejections - 35 USC § 101

4. Claim amendment received on 3/12/2007. The changes are accepted and therefore, the 35 U.S.C. 101 rejections made in a prior Office Action are withdrawn.

Claim Rejections - 35 USC § 112

5. Applicant's explanation is acknowledged and the 35 U.S.C. 112, 2nd paragraph, rejections made in a prior Office Action are withdrawn.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

7. Claim 1 is rejected under 35 U.S.C. 102(a) as being anticipated by U.S. Patent No. 6,556,990 issued to Lane (hereinafter).

Regarding Claim 1, Lane discloses a method for indexing a database table, said table comprising a column of values, the method comprising the steps of:

A). identifying a plurality of substrings, each substring comprising one or more characters, as the sub-string “CDE” is used to find the corresponding sub-string (Lane: col. 5, lns. 18-33); and

B). for each substring creating a corresponding index over the column, wherein each corresponding index includes a respective entry for each value in the column, the respective entry for a particular value being indicative of whether the corresponding substring occurs in that particular value, as the sub-string within the relational database is used to perform a lookup in sub-string index (Lane: col. 5, lns. 18-34, 38-41 and 47-66; col. 6, lns. 17-25).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 2, 17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lane as applied to claim 1 above, in view of U.S. Patent No. 6,785,677 issued to Fritchman (hereafter Fritchman).

Regarding Claim 2, Lane discloses the method wherein the respective entry for the particular value is indicative of the corresponding substring in that particular value (Lane: col. 5, lns. 61-col. 6, lns. 13)

Lane does not explicitly disclose:

a number of occurrences of.

However, Fritchman discloses:

a number of occurrences of (Fritchman: col. 7, lns. 30-35).

It would have been obvious for a person with ordinary skill in the art to modify the teachings of Lane with the teaching of Fritchman to utilize the feature of matching characters occurring in the pattern within the string with the motivation to enhance determining whether a text string is a member of a set of strings or not (Fritchman: col. 2, lns. 37-49).

Regarding Claims 17 and 19, Lane discloses an apparatus for executing a query on a database table, said table comprising values, the apparatus comprising:

A). at least one processor, as a processor (Lane: col. 4, lns. 1-6);

B). a memory coupled with the at least one processor, as a storage device in a computer system (Lane: col. 3, lns. 60-col. 4, lns. 6);

C). a plurality of indices stored within said memory each index corresponds to one of a plurality of substrings and each index includes a respective entry for each value, the respective entry indicative of whether the corresponding substring occurs within the value, as the sub-string within the relational database is used to perform a lookup in sub-string index (Lane: col. 3, lns. 52-67; col. 5, lns. 28-34, 38-41 and 47-66; col. 6, lns. 17-25); **and**

D). a program code residing in the memory and executed by the at least one processor, the program code configured to scan the values of the table based, as the computer readable storage medium stores a program code and the look-up process (Lane: col. 3, lns. 23-35; col. 5, lns. 23-33)

Lane does not explicitly disclose:

D). a combination of the plurality of indices

However, Fritchman discloses:

D). a combination of the plurality of indices, as a pattern string (Fritchman: col. 5, lns. 46-48).

It would have been obvious for a person with ordinary skill in the art to modify the teachings of Lane with the teaching of Fritchman to utilize the feature of matching characters occurring in the pattern within the string with the motivation to enhance determining whether a text string is a member of a set of strings or not (Fritchman: col. 2, lns. 37-49).

10. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lane in view of Fritchman as applied to claim 17 above, and further in view of U.S. Patent No. 5,845,276 issued to Emerson et al. (hereafter Emerson).

Regarding Claim 18, Lane and Fritchman do not explicitly disclose the apparatus wherein the program code is further configured to:

build a bitmap based on the plurality of indices, the bitmap having an element for each value of the column that is set based on the respective entries for that value from the plurality of indices.

However, Emerson discloses:

build a bitmap based on the plurality of indices, the bitmap having an element for each value of the column that is set based on the respective entries for that value from the plurality of indices (Emerson: col. 11, lns. 60-67; col. 12, lns. 1; col. 19, lns. 8-14- as a bitmap creation with an element for a value from a table).

It would have been obvious for a person with ordinary skill in the art to modify the teachings of Lane and the teaching of Fritchman with the teachings of Emerson to utilize the feature to generate the bitmap in the matching characters occurring in the pattern within the string with the motivation to enhance the relational database searching method (Emerson: col. 1, lns. 18-28).

Response to Arguments

11. Applicant's arguments filed 3/12/2007 have been fully considered but they are not persuasive.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "generating a plurality of indices over the same column") are not recited in the rejected claim 1. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. Lane does not specifically disclose "plurality of indices." Lane teaches that indices are being created for columns (col. 5, lns. 18-34 of Lane). Lane also teaches utilizing sub-strings to create a sub-string index that can be used to locate the row containing the string based upon a sub-string (col. 6, lns. 17-25 of Lane). Again, as stated above, Lane discloses what has been claimed and therefore it is perfectly valid to interpret that teaching of Lane is enough to read on the claimed "each substring creating a corresponding index over the column."

Applicant argues that neither Lane nor Fritchman disclose the feature of "a plurality of substring-specific indices" in claims 17 and 19. However, the features upon which applicant relies (i.e., "substring-specific indices") are not recited in the rejected claims 17 and 19. It should be noted that the rejections regarding these claims are made under 35 U.S.C. 103(a). Although Lane does not disclose all of the claimed limitations, the feature (i.e., a combination of the plurality of indices) not disclosed by Lane is disclosed by Fritchman (col. 5, lns. 46-48 of Fritchman). One can not show non-obviousness by attacking references individually where, as here, the rejection is based on a combination of references. Thus, Lane in view of Fritchman disclose what has been claimed and reads on the broadly claimed limitation.

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Conclusion

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monica M. Pyo whose telephone number is 571-272-8192. The examiner can normally be reached on Mon & Thur 8:00 - 5:00.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Apu Mofiz can be reached on 571-272-4080. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

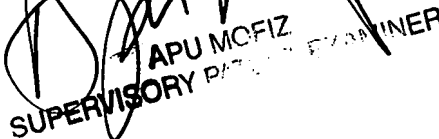
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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Monica M Pyo
Examiner
Art Unit 2161

mpyo
5/10/2007

Leslie Wong 
Primary Examiner


APU MCFIZ
SUPERVISORY PATENT EXAMINER